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AUTHOR Hathaway, Walter
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ABSTRACT

Students in grades 3 to 8, who participated in the Follow Through program in Portland, Oregon, were tested for their reading and mathematics achievement during Fall 1979, Spring and Fall 1980, and Spring 1981. The measuring instrument used was the Portland Basic Skills Achievement Levels Testing Program. Test results were reported as RIT (Rasch achievement unit) scores. The data for Follow Through students were compared with achievement data for control groups, achievement data for all students in the Portland School District, and national norms. This report presents the results of the comparison in the form of graphs and tables. It is concluded that the Portland Follow Through program has consistently raised and sustained basic skills achievement scores significantly above the control group and even above national norms, and that the effects have been more pronounced in reading than in mathematics. (MJL)

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EVIDENCE OF THE SUCCESS OF PORTLAND'S FOLLOW THROUGH PROGRAM FROM STANDARDIZED BASIC SKILLS ACHIEVEMENT DATA

Walter Hathaway
Portland (OR) Public Schools

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Introduction

In an article in the January 1981 issue of Educational Leadership the noted Early Childhood Researcher, Irving Lazar, speaking on the evaluation of Early Childhood intervention programs, said:

> "The legitimate measure of program success is the performance of those children in school as compared to an originally selected control group for whom the same baseline measures are available."

So far so good. But he went on to deny the possibility of a "decent design" for Early Childhood Education Programs such as Head Start and Follow Through, and turned instead to indirect, post factum measures of success, like assignment to special education programs. Without denying the importance of measures such as Dr. Lazar has employed, we have chosen to challenge his assumption that the best case design cannot be applied to Follow Through.

The conclusions borne out by the data that follows on the Portland Follow Through Program are that it has consistently raised and sustained Reading and Mathematics achievement scores significantly above a control group and even above national norms. These effects have been more pronounced in Reading than in Mathematics. This is consistent with the instructional emphasis of the program.

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The Instruments

The reason many school systems find difficulty in supporting proposals for Follow Through interventions with evidence on basic skills performance include:

- Lack of valid and reliable measurement instruments sensitive to the content and levels of difficulty of the local program's curriculum and to the target students' achievement levels.
- Lack of a continuous, student referenced, longitudinal data base, permitting evaluations of student performance as they move through grades and from school to school.
- Lack of measurement scales permitting meaningful comparisons of student gains over time.

The Portland school system has solved these problems through the development of a Rasch Model based, districtwide, standardized basic skills achievement measurement system called the Portland Basic Skills Achievement Levels Testing Program [1]

This program has the following properties:

- The tests are designed to faithfully and validly measure what students are taught at each grade level in the Portland schools.
- The tests are functionally administered so that the performance of each student is accurately and efficiently measured, and no child leaves the testing experience having learned that they do not "measure up."
- The underlying Rasch scale is equal-interval and permits meaningful comparisons both among groups and over time.

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1 Walter E. Hathaway. A School-District-Developed Rasch-Based Approach to Minimum Competency Achievement Measurement in Minimum Competency Achievement Testing, Richard M. Jaeger and Carol Kehr Tittle, Editors, McCutchan Publishing Corp., Berkeley, Calif., 1979.

- Measures are taken in both Spring and Fall for Reading and Mathematics at every grade, beginning with Grade 3, the earliest possible grade for sound group achievement measurement. Before this, grade evidence of success and progress is gathered by the variety of means described elsewhere in this proposal.

- A longitudinal student data base, driven by a computerized student indexing system, allows longitudinal measurement of the sustained effects of the Follow Through intervention long after the student has moved ahead past their last year of Follow Through support.

The Rasch Scale

The results of the Portland Achievement Level Tests are reported in terms of RIT (Rasch achievement unit) scores, which represent a range of achievement in each subject extending from the simpler to the more difficult skills that can be acquired in Grades 3 and above. These are equal-interval units much like those found on a ruler or a thermometer. The scale itself has been designed to range from 140 to 280 to avoid confusion with percentiles or more common units.

Use of the RIT scale permits more accurate interpretation of individual and group scores, since the unit of measurement used has the same magnitude at all points on the scale. This permits computation of means, standard deviations and other descriptive statistics that aid in understanding group performance.

The Rasch scale is independent of any relationship to a norming sample. Each test item has a precisely determined level of difficulty relative to other items with which it is associated in a test. This is determined by a mathematical procedure developed by Georg Rasch that eliminates the effect of the ability of the groups trying the items. This process is explained in the technical manual for the tests which is available upon request.

The Question

The Portland Basic Skills Levels Achievement Testing Program described below in general provides a unique capability for monitoring, evaluating and improving and demonstrating the long term success of experimental Early Childhood education programs. Specifically, it has allowed us to address the crucial question:

> How does the basic skills achievement of the students who have participated in the Portland Follow Through Program compare to that of:
>
> 1. A control group composed of students of comparable background and ability who have not been supported by Follow Through experiences,
> 2. Districtwide local norms,
> 3. National norms?

The Design and the Data

The primary data used for this study were city-wide achievement scores in Reading and Mathematics from four testing periods (Fall 1979, Spring 1980, Fall 1980, and Spring 1981) at each elementary grade level, from the beginning of Grade 3 through Grade 8, for all Follow Through students who were in the program in Grade 3 and who were also in the program at least one full year prior to measurement. All graphs, gains and comparisons are based on "intact" group data; i.e., only the scores of students measured both Fall

and Spring of a given year are included. This is done to eliminate effects due to changes in student body composition.

The data on the basic skills achievement of Follow Through students during their last year in the program and thereafter through four testing periods was compared with similar data from a set of "control schools," and from all students in the district, and with national norms. The graphs and tables in the following pages present the results of these comparisons.

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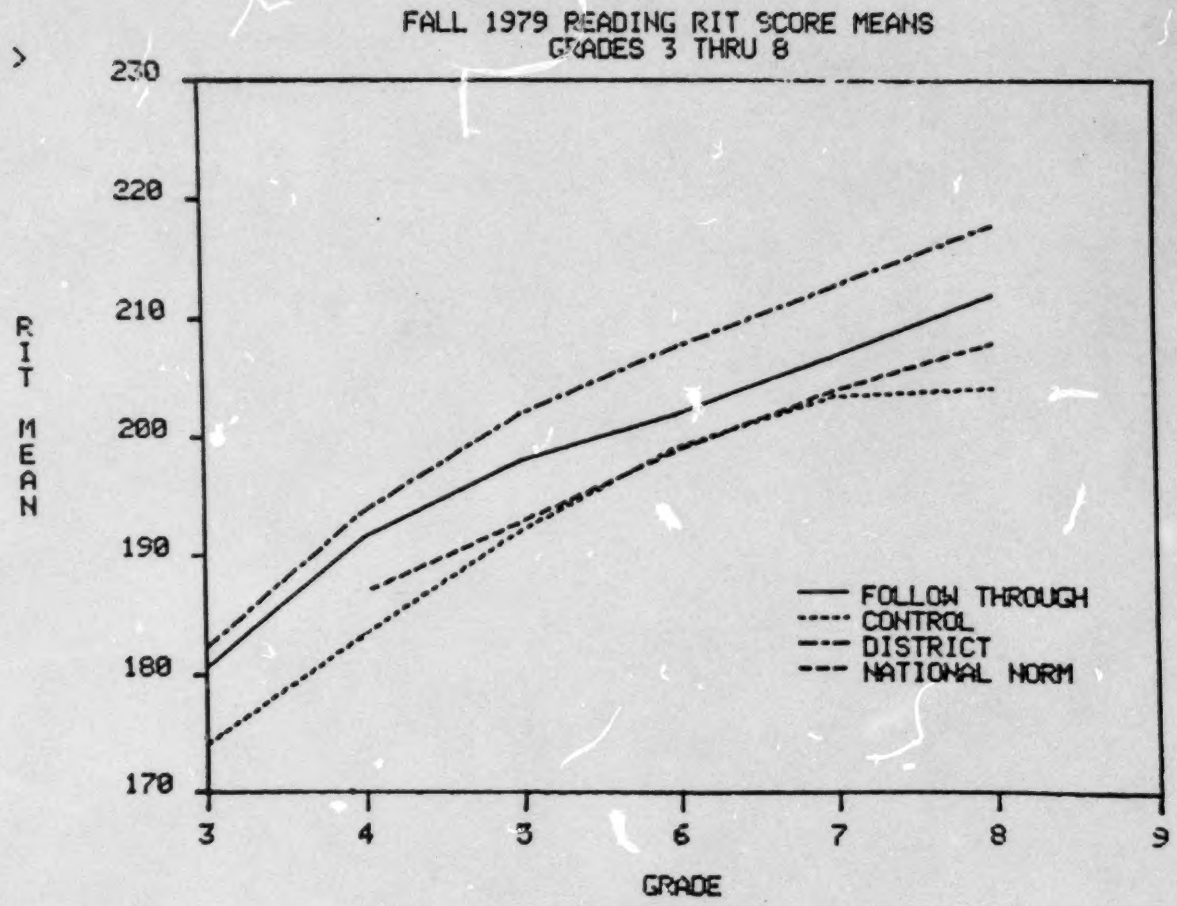
Table I

A Comparison of the Means of the
Follow Through Group
and the Means of a Control Group Consisting of
the 5 Comparable Schools in the same Neighborhood

	RIT Score Difference between Follow Through and Control	
Fall 1979 Intact Reading Rit		**Fall 1979 Intact Math Rit**
Grade 3	6.5	5.4
Grade 4	8.2	7.0
Grade 5	5.8	4.7
Grade 6	2.7	1.1
Grade 7	3.4	2.7
Grade 8	7.9	4.9
Spring 1980 Intact Reading Rit		**Spring 1980 Intact Math Rit**
Grade 3	7.3	5.3
Grade 4	7.0	8.5
Grade 5	5.9	4.5
Grade 6	.3	- .2
Grade 7	2.7	1.9
Grade 8	4.2	2.2
Fall 1980 Intact Reading Rit		**Fall 1980 Intact Math Rit**
Grade 3	Data Unavailable as yet	Data Unavailable as yet
Grade 4	12.2	5.7
Grade 5	13.5	9.5
Grade 6	3.6	4.5
Grade 7	5.5	1.8
Grade 8	2.9	.9
Spring 1981 Intact Reading Rit		**Spring 1981 Intact Math Rit**
Grade 3	Data Unavailable as yet	Data Unavailable as yet
Grade 4	10.3	5.5
Grade 5	9.6	11.3
Grade 6	3.2	3.2
Grade 7	-2.3	- .2
Grade 8	1.5	- .3


FALL 1979 READING RIT SCORE MEANS
GRADES 3 THRU 8
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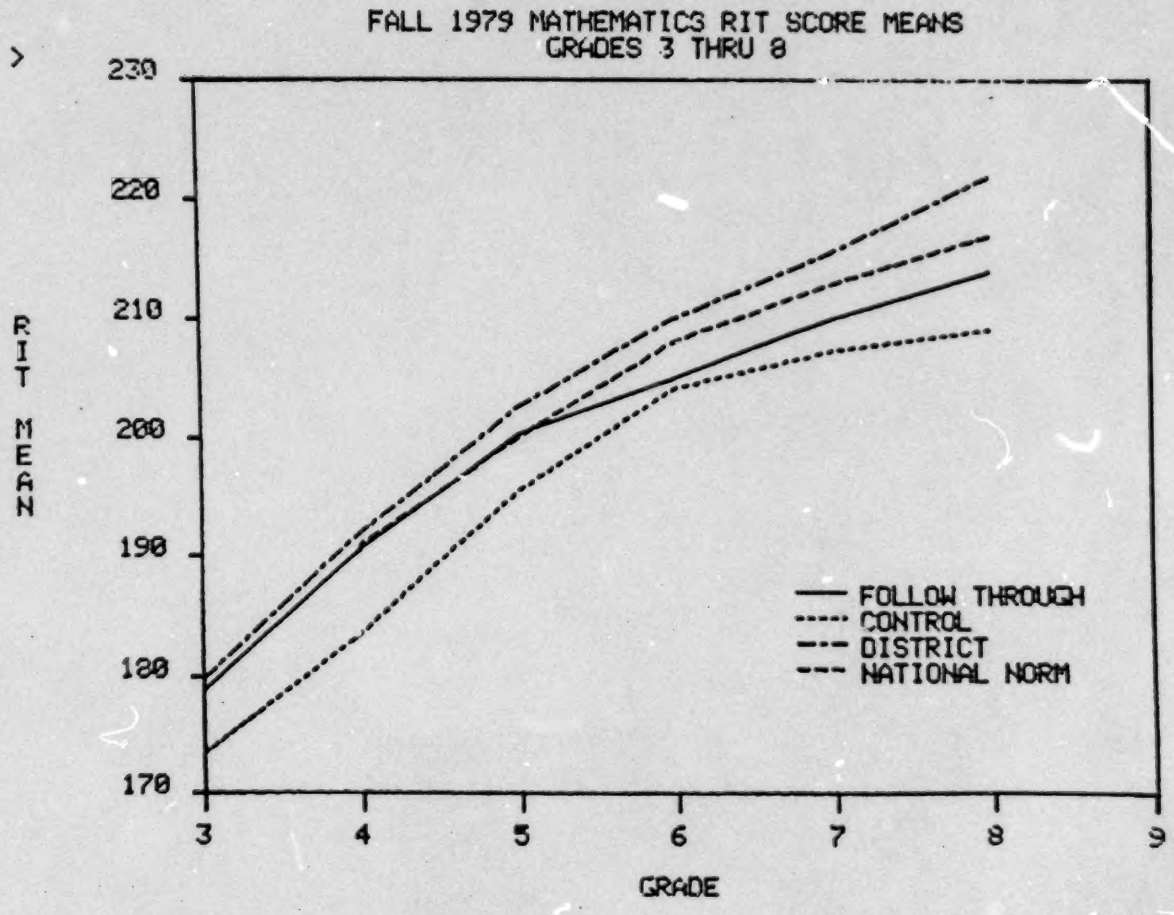
NATIONAL NORM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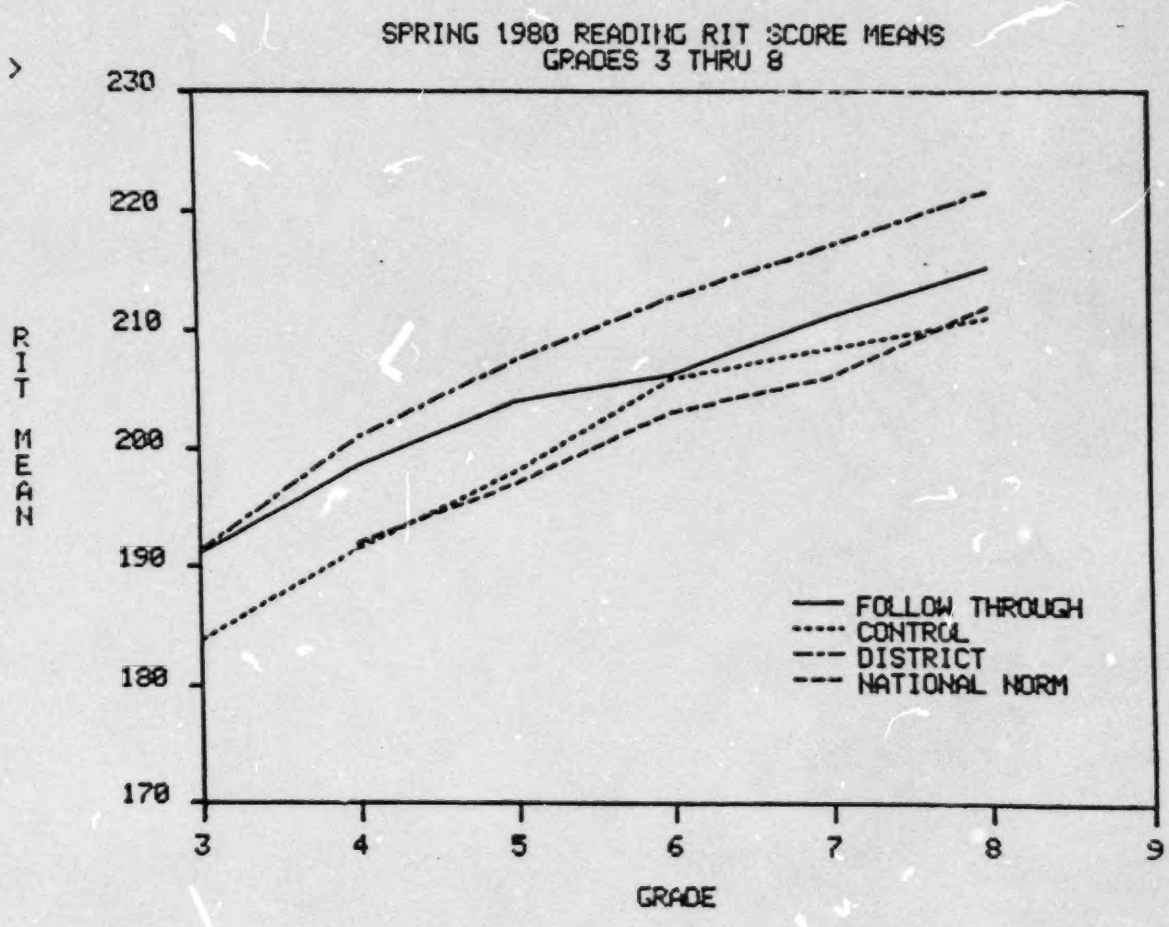
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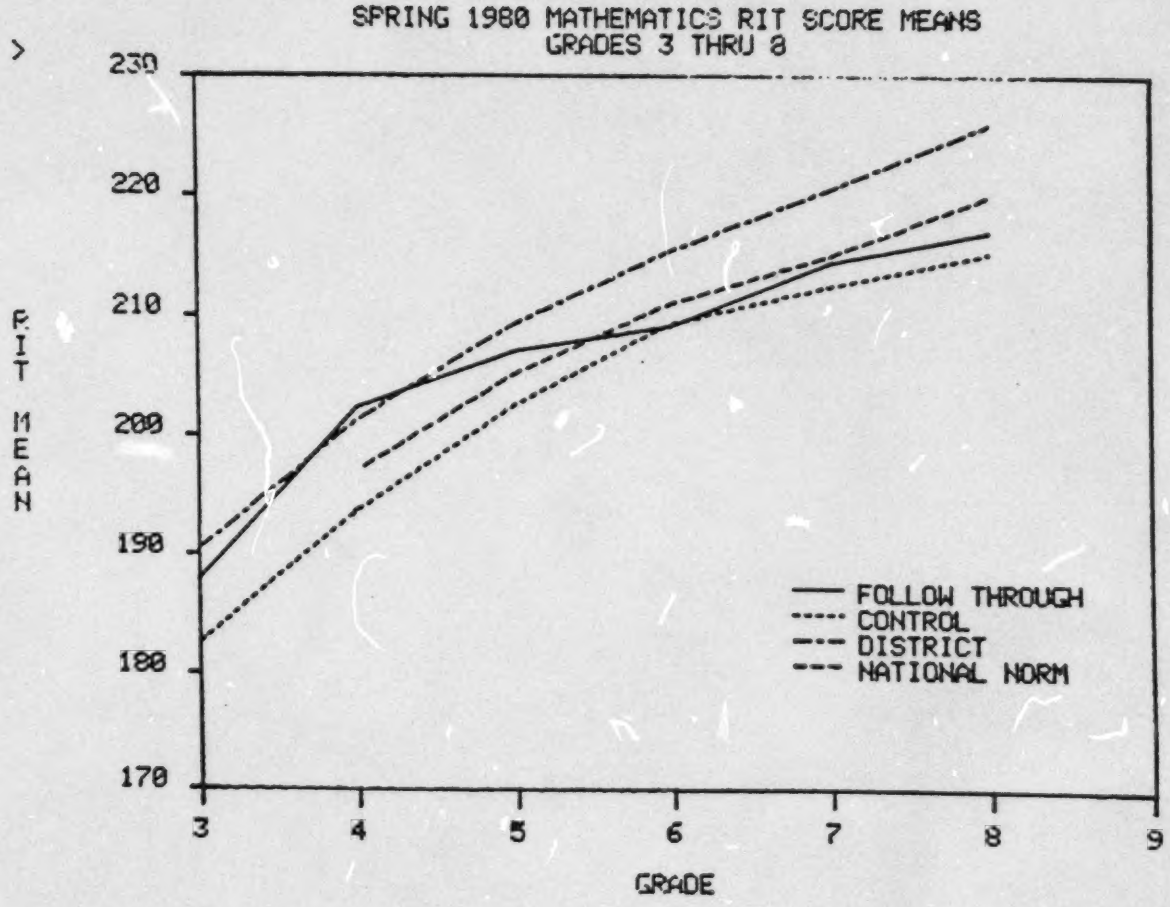
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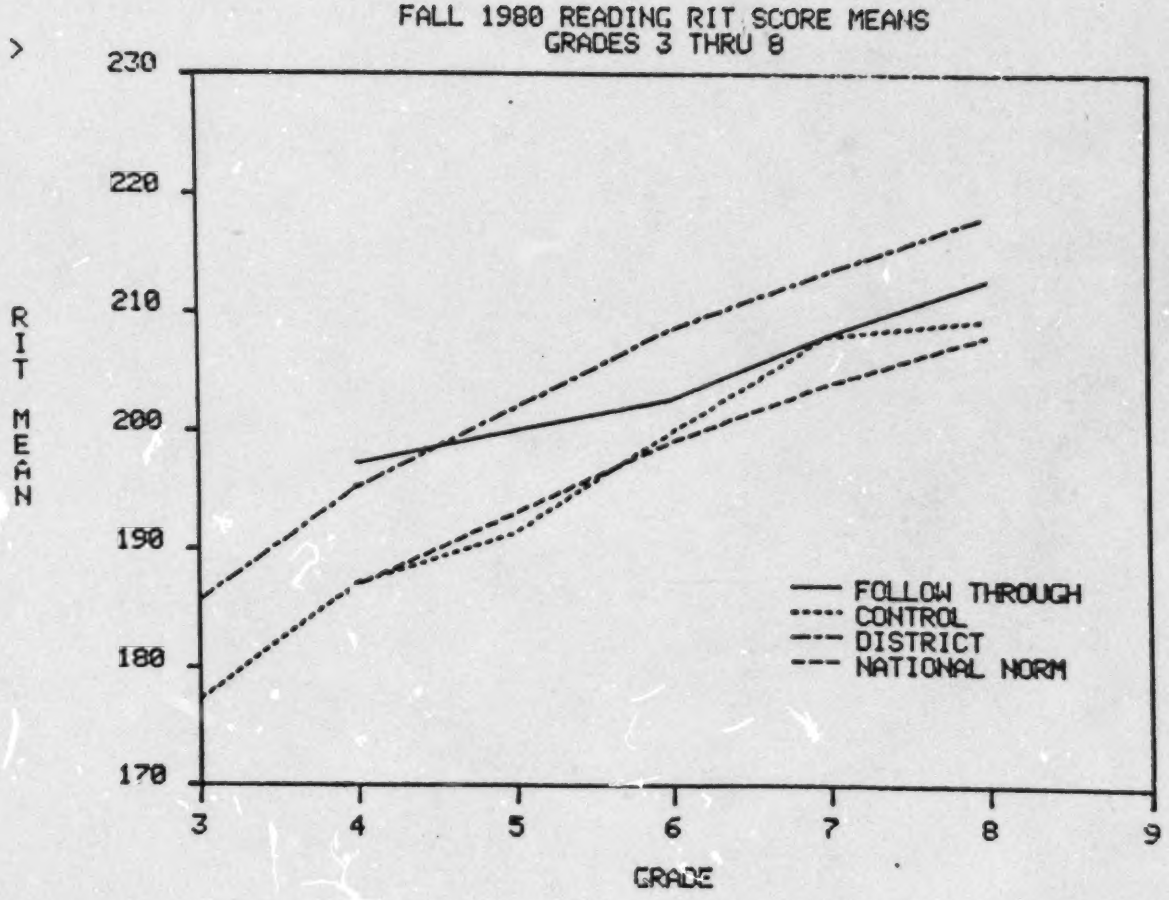
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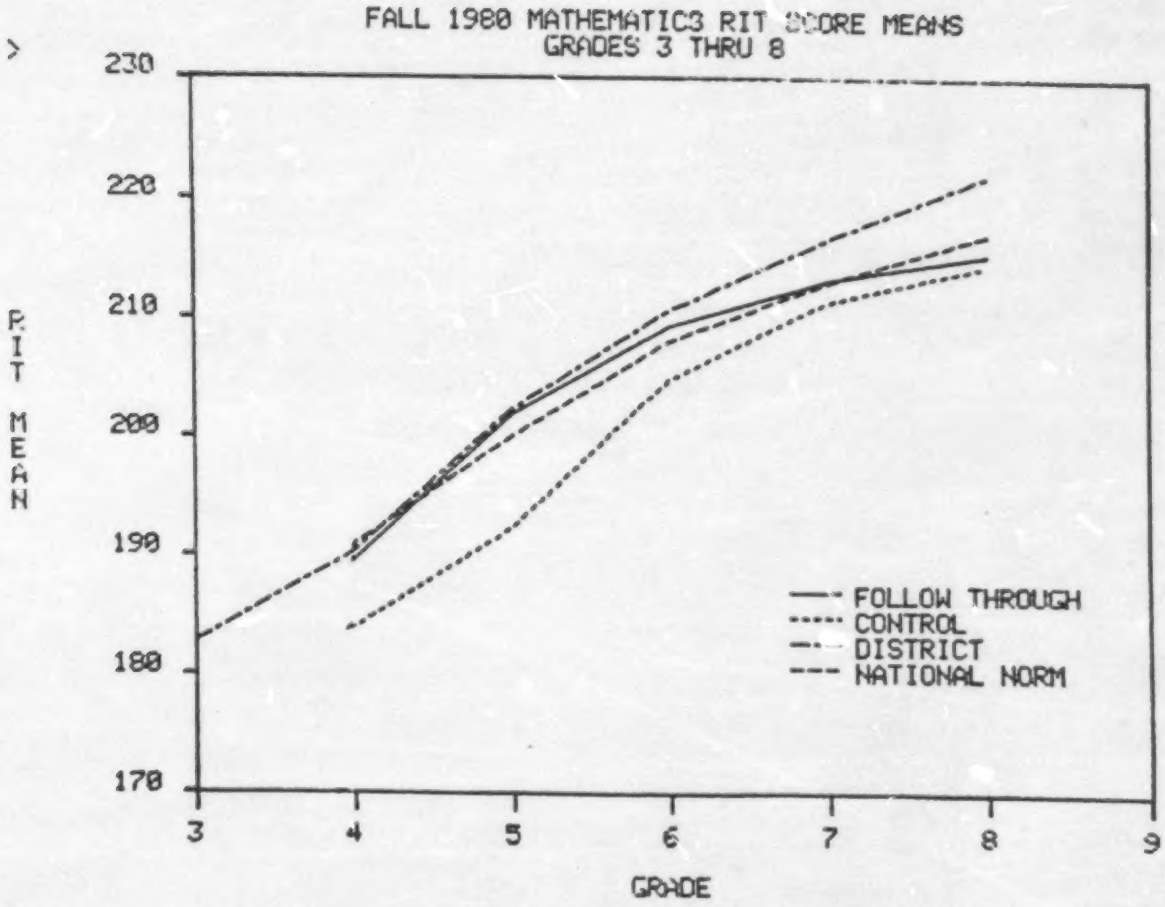
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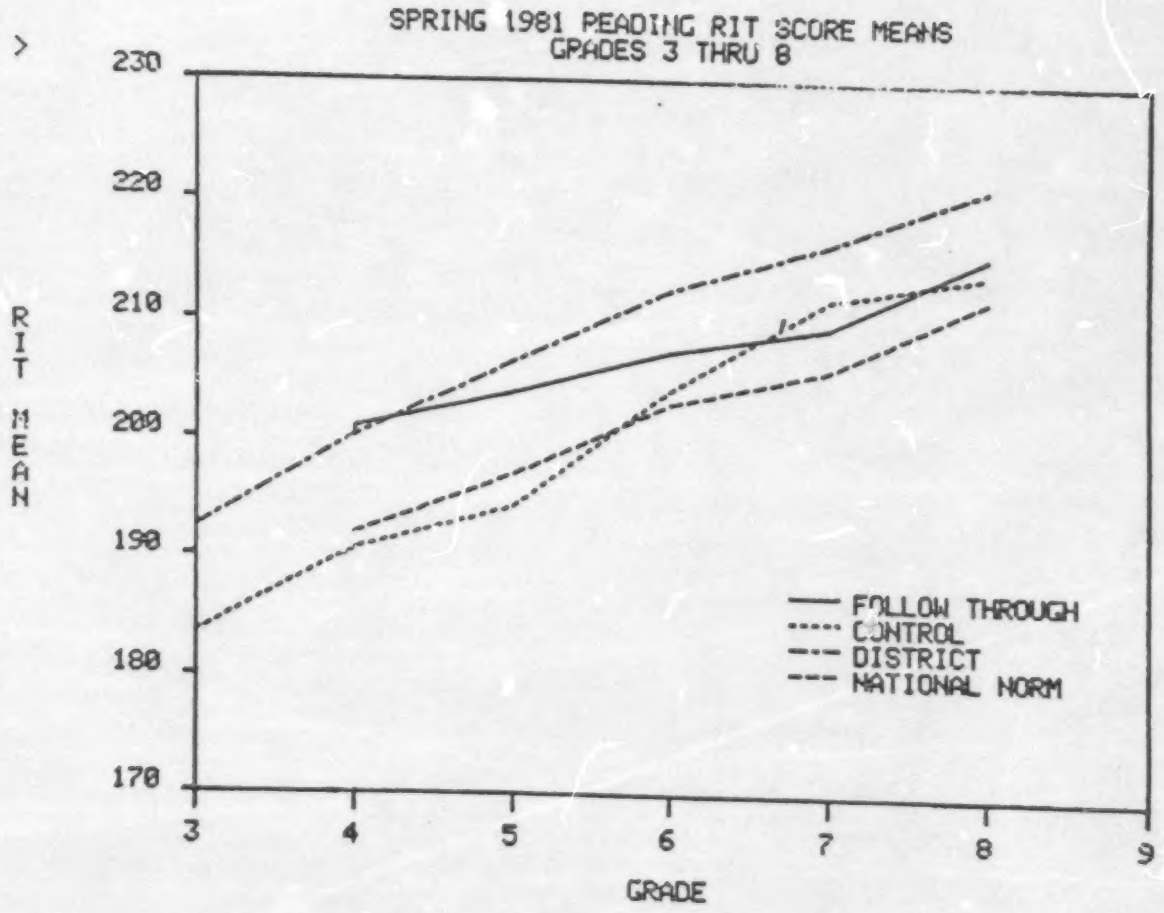
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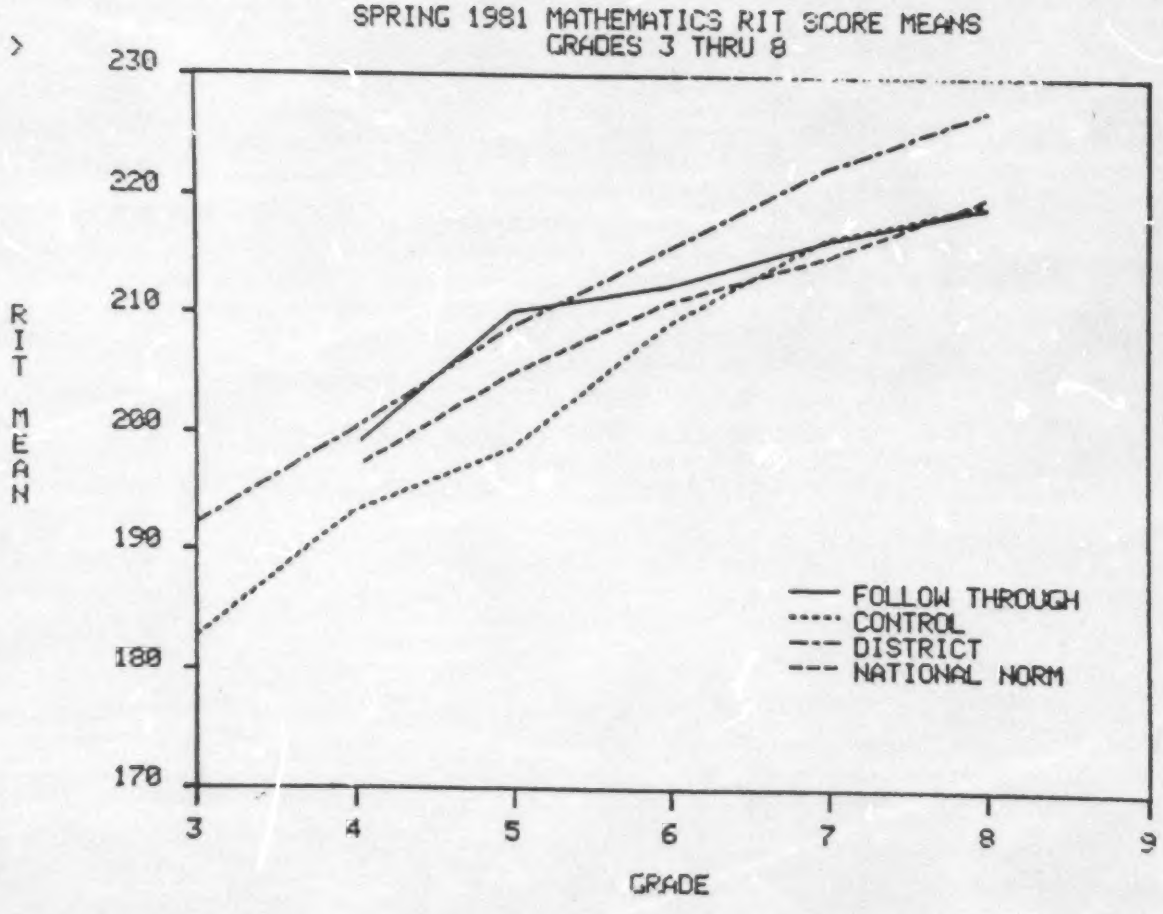
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